

REMARKS

Claims 1-6 have been examined on their merits, and are all the claims pending in the application.

Applicants herein amend claims 1 and 6, and submit that the amendments to claims 1 and 6 do not raise any new issues requiring further search and/or consideration by the Examiner. Entry and consideration of the amendments to claims 1 and 6 is respectfully requested.

2. Claims 1-6 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Miyachi *et al.* (EP 1 043 859). Applicants traverse the rejection of claims 1-6 at least for the reasons set forth below.

To support a conclusion that a claimed invention lacks novelty under 35 U.S.C. § 102, a single source must teach all of the elements of a claim. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379 (Fed. Cir. 1986). A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). A single source must disclose all of the claimed elements arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). Rejections under 35 U.S.C. § 102 are proper only when the claimed subject matter is identically disclosed or described in the prior art. Thus, the cited reference must clearly and unequivocally disclose every element and limitation of the claimed invention.

With respect to claim 1, Miyachi *et al.* do not teach or suggest an optical demultiplexing system for demultiplexing a multiplexed signal consisting of m interleaved bands of wavelengths, wherein each interleaved band consists of p wavelengths, and the numbers m and p are always mutually prime. In Applicants' disclosure, Applicants point out that, if the number of interleaved bands of wavelengths and the number of wavelengths in each interleaved band are not always mutually prime, then the demultiplexing is not possible. See page 8, lines 7-12 of the Applicants' disclosure. There is no such disclosure in Miyachi *et al.*, as Miyachi *et al.* certainly discloses that it is entirely possible that the number of interleaved bands of wavelengths and the number of wavelengths in each interleaved band are equal to each other ("FIG. 14 shows an example in which $M=4$ and $K=4$." See paragraph [0097] of Miyachi *et al.*).¹ In Miyachi *et al.*'s disclosure with respect to the first and second optical demultiplexers (113, 114) in Figure 13, there is certainly no disclosure with respect to the number of interleaved bands of wavelengths and the number of wavelengths in each interleaved band always being mutually prime.

Based on the foregoing reasons, Applicants submit that Miyachi *et al.* fail to disclose all of the claimed elements as arranged in claim 1. Therefore, under *Hybritech* and *Richardson*, Miyachi *et al.* clearly cannot anticipate the present invention as recited in independent claim 1. Thus, Applicants submit that claim 1 is allowable, and further submit that claims 2-5 are allowable as well, at least by virtue of their dependency from claim 1. Applicants respectfully request that the Examiner withdraw the § 102(e) rejection of claims 1-5.

¹ Although the Examiner asserts that M and K would inherently differ, Miyachi *et al.* explicitly state that M and K are equal to each other.

With respect to claim 6, Miyachi *et al.* do not teach or suggest an optical multiplexing system for creating a multiplexed signal consisting of m interleaved bands of wavelengths, wherein each interleaved band consists of p wavelengths, and the numbers m and p are always mutually prime. Again, the Examiner argues that the teaching of the mutually prime numbers m and p is allegedly inherent in the disclosure of Miyachi *et al.* Similar to the above discussion with respect to claim 1, however, Miyachi *et al.* lack any disclosure with respect to the number of interleaved bands of wavelengths and the number of wavelengths in each interleaved band always being mutually prime. Based on the foregoing reasons, Applicants submit that Miyachi *et al.* fail to disclose all of the claimed elements as arranged in claim 6. Therefore, under *Hybritech* and *Richardson*, Miyachi *et al.* clearly cannot anticipate the present invention as recited in independent claim 6. Thus, Applicants submit that claim 6 is allowable. Applicants respectfully request that the Examiner withdraw the § 102(e) rejection of claim 6.

3. Claims 1-6 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Miyachi *et al.* (EP 1 043 859). Applicants traverse the rejection of claims 1-6 at least for the reasons set forth below.

The initial burden of establishing that a claimed invention is *prima facie* obvious rests on the USPTO. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). To make its *prima facie* case of obviousness, the USPTO must satisfy three requirements:

- a) The prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have

motivated to artisan to modify a reference or to combine references. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988).

- b) The proposed modification of the prior art must have had a reasonable expectation of success, and that determined from the vantage point of the artisan at the time the invention was made. *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209 (Fed. Cir. 1991).
- c) The prior art reference or combination of references must teach or suggest all the limitations of the claims. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991); *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, the nature of a problem to be solved. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Alternatively, the motivation may be implicit from the prior art as a whole, rather than expressly stated. *Id.* Regardless if the USPTO relies on an express or an implicit showing of motivation, the USPTO is obligated to provide particular findings related to its conclusion, and those findings must be clear and particular. *Id.* A broad conclusionary statement, standing alone without support, is not “evidence.” *Id.*; *see also, In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001).

In addition, a rejection cannot be predicated on the mere identification of individual components of claimed limitations. *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000). Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the

claimed invention, would have selected these components for combination in the manner claimed. *Id.*

With respect to claim 1, Miyachi *et al.* do not teach or suggest an optical demultiplexing system for demultiplexing a multiplexed signal consisting of m interleaved bands of wavelengths, wherein each interleaved band consists of p wavelengths, and the numbers m and p are always mutually prime. As discussed above with respect to the 35 U.S.C. § 102(e) rejection, Miyachi *et al.* fails to teach or suggest that the numbers m and p must be mutually prime for proper demultiplexing; otherwise, wavelengths will be missed. See page 8, lines 7-12; page 9, lines 7-9 of the Applicants' disclosure. Miyachi *et al.* neither disclose nor contemplate such a feature. Thus, Applicants submit that the Examiner cannot fulfill the "all limitations" prong of a *prima facie* case of obviousness, as required by *In re Vaeck*.

Since Miyachi *et al.* fail to disclose an optical demultiplexing system for demultiplexing a multiplexed signal as recited in claim 1, Applicants believe that one of ordinary skill in the art would not be motivated to modify the reference. *In re Dembiczak* and *In re Zurko* require the Examiner to provide particularized facts on the record as to why one of skill would be motivated to modify a reference. Without a motivation to modify, a rejection based on a *prima facie* case of obviousness is improper. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998)). The level of skill in the art cannot be relied upon to provide the suggestion to modify a reference. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999). The Examiner must make specific factual findings with respect to the motivation to modify a reference. *In re Lee*, 277 F.3d 1338, 1342-44 (Fed. Cir. 2002). The Examiner has not provided a motivation analysis, and Miyachi *et*

al. lack any teaching about the desirability of an optical demultiplexing system for demultiplexing a multiplexed signal, wherein the number of bands and the number of wavelengths comprising the bands are always mutually prime numbers.. Applicants believe that the Examiner cannot fulfill the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Based on the foregoing reasons, Applicants submit that Miyachi *et al.* fail to disclose all of the claimed elements as arranged in claim 1. Therefore, Miyachi *et al.* clearly cannot render the present invention obvious as recited in claim 1. Thus, Applicants submit that claim 1 is allowable, and further submit that claims 2-5 are allowable as well, at least by virtue of their dependency from claim 1. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 1-5.

With respect to claim 6, Miyachi *et al.* do not teach or suggest an optical multiplexing system for creating a multiplexed signal consisting of *m* interleaved bands of wavelengths, wherein each interleaved band consists of *p* wavelengths, and the numbers *m* and *p* are always mutually prime. Similar to the above discussion with respect to claim 1, Miyachi *et al.* lack any disclosure with respect to the number of interleaved bands of wavelengths and the number of wavelengths in each interleaved band always being mutually prime. Thus, Applicants submit that claim 6 is allowable, and respectfully request that the Examiner withdraw the § 103(a) rejection of claim 6.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

AMENDMENT UNDER 37 C.F.R. § 1.116
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Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

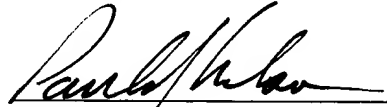
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